



Affording college with the help of asset building: First experimental impacts from Italy

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HIGHLIGHTS

- We use randomization to study the impact of asset-building on education attainment.
- A multidimensional targeting was implemented to consider the marginal students.
- The program had a positive impact on university enrolment and on performances.
- Students from vocational track benefited more of the program.
- Asset building has a potential to be included into standard financial aid policy.

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ABSTRACT

This paper presents the early impact estimates from a randomized controlled trial aimed at testing the efficacy of an asset-building programme on higher education participation of children coming from low-income families. The experimental evidence points to positive and statistically significant impacts of the programme on university enrolment (+8.7 percentage points) and the likelihood of passing at least one exam in the first semester (+9.3 pp). The impact of the programme is substantially larger for students from vocational schools (+21 and +33 pp, respectively). The results suggests that incentivized savings represent a viable option to improve the effectiveness of financial aid.

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1. Introduction

In many developed countries, social disparities in access to tertiary education are still prominent and pervasive. Children of socioeconomically deprived families struggle to obtain high educational degrees because of a mix of financial constraints and low educational expectations of their parents (Goldrick-Rab et al., 2016). Financial aid policy that successfully manages to attenuate disadvantaged families' financial constraints as well as enhance

their educational expectation is a possible solution to tackle social inequality in education attainment (Kim et al., 2018).

Individual development accounts based on asset-building mechanisms are increasingly seen as a viable policy option to foster families' long-term development goals (Sherraden, 1991; Beverly et al., 2013). Asset-building programmes for post-secondary education investments (also known as individual, child or student development accounts) have been implemented in several countries (Loke and Sherraden, 2009; Beverly et al., 2013). These programmes are thought of having several comparative advantages over the most classical forms of financial aid such as scholarships, loans or tuition waivers (Dynarski and Scott-Clayton, 2013). By stimulating stronger and longer-lasting family commitment and financial plans, asset-building programmes trigger parents' ex-

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expectations and children's attitudes towards education by making the entire family more confident about the actual sustainability of long-term education plans (Beverly et al., 2013; Kim et al., 2015, 2017). In contexts such as the US, asset-building programmes have also been recognized as a potential strategy to reduce students' reliance on loans (Assets and Education Initiative, 2013; Elliott et al., 2014). Despite all these arguments, evidence about the effectiveness of the asset is scarce (Leckie et al., 2010; Cheatham and Elliot, 2013; Grinstein-Weiss et al., 2013; Kim et al., 2018). In this article, we present the early impact estimates of a randomized controlled trial aimed at assessing effectiveness of an asset-building programme (*Percorsi*) on high-school students' transition to university.

2. The ACHAB experiment

The ACHAB experiment was implemented in the province of Torino (Northwestern Italy) between 2014 and 2017 and targeted students who were attending the last two years of high school and came from low-income families.¹ Those who applied and were randomly assigned to the treatment group had a dedicated savings account opened in their name and had to save between €5 and €50 a month to remain in the programme. Deposits were matched at a rate of 2 to 1 for high-school related expenses and at a rate of 4 to 1 for university-related ones thanks to the contribution of a private donor, the *Compagnia di San Paolo*.² The money could be accumulated for a maximum of €2,000, and then matched for a maximum of €8,000. The savings accumulated through *Percorsi* could be spent only on education-related expenses, such as tuition fees, transportation and books. In addition, students and their families in the treatment group were required to attend financial education classes.

The features of the *Percorsi* that led us to hypothesize a positive impact of the programme on university participation are three. First, *Percorsi* stimulates the active involvement of the family in the education investment of their children. By saving regular amounts of money for an extended period before university enrolment, parents can improve their financial planning, and this could reinforce their university expectations as well as trigger students' motivation and attitudes towards higher education. Second, in comparison to standard financial aid measures (such as the "*Diritto allo Studio*" scholarships in Italy), both the students and their families are aware of the actual availability of the financial resources needed to sustain the university costs before the end of high school. Third, *Percorsi* imposes strong withdrawal restrictions, as the matched savings can be spent only for duly documented education-related expenses.

3. The data

Students were recruited through two massive promotional campaigns carried out at the beginning of school years 2014/2015 and 2015/2016. Three cohorts of students were involved: 13th graders and 12th graders in school year 2014/2015, and 13th graders in school year 2015/2016. To sign up for the programme, applicants had to fill up an application form (hereafter "baseline form") and provide a set of information about their socio-demographic characteristics, social origins and past school careers.

The baseline data was used to exclude from the study those students who were least likely to enrol ("never enrollees") as well as those students who had a very high probability to enrol in

university ("always enrollees"). Out of the total 1,239 applicants,³ 52 were dropped as "never-enrollees" because in the application form they reported either they had no intention to enrol in the university or they were undecided because of economic-unrelated reasons. The identification of "always enrollees" was achieved with the following procedure. First, a model of university enrolment was estimated with external data from the Survey on High School Graduates from the Province of Trento (Northeast Italy). Second, the coefficients obtained from step one were applied to ACHAB applicants' characteristics to predict their probability of enrolling in university. Third, the 1,187 applicants were ranked according to their predicted enrolment probability. Fourth, the 770 cases with the smallest predicted probability were retained, while the remaining 417 students were dropped.⁴

Three-hundred applicants were randomly assigned to the treatment group and the remaining 470 to the control group. Randomization was implemented within the nine blocks given by the interaction of the three cohorts and the three upper secondary school tracks.⁵

Post-treatment outcomes were collected via CATI interviews conducted in March (Wave I) and in October (Wave II) in 2016 and 2017 for the three cohorts of students. Wave I collected information about university enrolment and the number of exams passed by the end of the first semester. Wave II collected information on retention and second-year enrolment. In this paper, Wave I data are analysed.

The integrity of the experiment has been tested both through group equivalence tests and attrition analysis. The two groups do not differ significantly on characteristics measured at baseline (see Table 1). As shown in Table 2, attrition rate in Wave I was very low (4.2%) with negligible differences across treatment and control groups (2.4% vs. 5.4%). Overall and differential attrition is always below the thresholds identified as recognized standards in randomized controlled trials (What Works Clearinghouse, 2014).

4. Main findings

We consider two sequential outcomes related to students' university transition and initial academic career. The first one is university enrolment. The second outcome is passing of at least one exam during the first semester, which is coded as taking value zero for both those who did not take any exam the first semester and for those who never enrolled. The unconditional effects of the programme are estimated through an OLS regression:

$$Y_i = \beta_0 + \beta_1 \cdot Z_i + \beta_2 \cdot B_i + \beta_3 \cdot X_i + \varepsilon_i$$

Where Y is the outcome of interest, Z is the treatment assignment, B are the blocking variables and X is a set of relevant characteristics (sex, school career and family income) included in order to increase the precision of our estimates.⁶ Because of the negligible non-compliance to treatment assignment (only 11 crossovers and zero no-shows), only intent-to-treat (ITT) effects are presented.

Table 3 (first column) shows the estimates for the two outcomes described above. Concerning university enrolment, control students have a transition rate of 67.1%. In the treatment group, this

³ 101 invalid or incomplete applications were excluded from the beginning.

⁴ 300 students were the maximum number of slots that could be funded; 470 students were used to guarantee an adequate number of control cases, also taking into account a higher non-response.

⁵ Upper-secondary education in Italy is divided into three branches: Academic (*Licei*), Technical (*Istituti Tecnici*), or Vocational (*Istituti Professionali*). Even if higher education is formally accessible independently of the type of school attended, the latter strongly affects both university enrolment and completion rates.

⁶ Results are qualitatively unchanged if no controls are added.

¹ Income threshold was set to 25,000 euros of family equivalent annual income (ISEE).

² This in the same vein as the *Promise* movement expanding rapidly in the United States and Canada.

Table 1
Balancing test of treatment and control groups.

	Control group mean	Treatment group mean	p-value t-test
<i>Female</i>	0.546	0.592	0.224
<i>ISEE</i>	9,553.8	9,937.6	0.518
<i>Social class</i>			
Service and white collars	0.377	0.346	0.398
Self-employed	0.133	0.142	0.749
Working class	0.489	0.512	0.553
<i>Parental education</i>			
Up to lower secondary degree	0.396	0.443	0.210
Upper secondary degree	0.464	0.443	0.584
Tertiary degree	0.141	0.114	0.305
<i>Migration background</i>			
Native	0.796	0.792	0.900
Mixed parents	0.061	0.042	0.257
Both parents migrants	0.143	0.166	0.397
<i>Household size (>5)</i>	0.108	0.100	0.752
<i>Lower-secondary education final grade</i>			
Excellent	0.286	0.215	0.032
Very good	0.255	0.284	0.399
Good	0.321	0.398	0.034
Sufficient	0.138	0.104	0.172
<i>Never took remedial courses</i>	0.529	0.536	0.853
<i>Never failed a grade</i>	0.770	0.817	0.138
<i>Aiming at enrolling in a University</i>	0.506	0.502	0.914
N	427	289	716

Table 2
Overall and differential attrition.

	Baseline sample	Wave I	
		N	Attrition (%)
Control group	427	404	5.4
Treatment group	289	282	2.4
Treatment–Control			–3.0
Total	716	686	4.2

rate is higher (75.5%). The regression-adjusted difference amounts to 8.7 percentage points. The programme shows a positive effect also on the likelihood of having taken at least one exam at the end of the first semester (+9.3 pp). These effects are sizeable and meaningful in substantive terms.

Table 3 also reports the estimates stratified by high school track. Despite the small sample size, the results show a clearly interpretable pattern. The effects on enrolment for the academic track is quite high (+9.1 pp) but marginally significant; while no significant effect is there for the technical track. The result for vocational track students is strikingly high (+20 pp) and statistically significant. Even stronger effects are found when looking at the second outcome. In this case, the positive effect for the vocational track exceeds 30 pp, while it disappears for the academic track.

5. Conclusions and discussion

The programme under study succeeded in increasing low-income students' university enrolment, revealing that there exist

financial constraints to enrolling in college. The results seem to indicate that an asset-building programme such as *Percorsi* has the potential to be streamlined into financial aid policy schemes aimed at reducing social inequality in education.

The findings also suggest the existence of heterogeneity of the effects by school track, indicating that the programme may be more successful if targeted to vocational-track students, i.e. those students with the lowest average university transition. Targeting the intervention to this subgroup of students could improve the cost-effectiveness of the intervention, as the 'deadweight' (i.e., the share of students that would enrol at the university even in the absence of the monetary benefit) is smaller.

This paper's main goal was presenting the innovative aspects of the tested intervention, the experimental design, alongside with the early impact estimates. In the future, data coming from Wave II could provide more information about the effects on performance and dropout. Also, additional analyses on the heterogeneity of the effects by student characteristics, that are relevant predictors of university enrolment and attainment, are in order to shed further light on the possible mechanisms that lie behind the impact estimates.

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Table 3
Regression-adjusted ITT estimate, overall and by high school track.

	Overall (1)		Academic (2)		Technical (3)		Vocational (4)	
	ITT	S.E.	ITT	S.E.	ITT	S.E.	ITT	S.E.
Enrolment	0.087***	0.032	0.091*	0.040	0.047	0.059	0.205**	0.102
At least one exam in first semester	0.093***	0.036	0.069	0.049	0.046	0.062	0.333**	0.099
N	686		333		249		104	

* p < .1

** p < .05

*** p < .01

as well as the staff of *Ufficio Pio - Compagnia di San Paolo*, where the *Percorsi* programme was first originated.

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